

THE CARTER CENTER



The Georgia Risk-Limiting Audit/Hand Tally: A Carter Center Observation Report

November 2020

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Executive Summary

Following the November 2020 election, Georgia conducted a risk-limiting audit (RLA) of the presidential race. This audit constituted the largest hand tally of an election race in U.S. history. The Carter Center, which has observed more than 110 elections in 39 countries, was the only nonpartisan organization credentialed by the Office of the Secretary of State to provide an impartial assessment of the implementation of the audit process. The Center had the same access provided to the political party monitors who were present throughout the state. In deploying independent monitors to observe the Georgia RLA, The Carter Center hoped to bolster voter confidence in Georgia's electoral process by assessing the state's efforts to improve the transparency of its elections.

Over five days, The Carter Center deployed 52 monitors to 25 counties during the COVID-19 pandemic and a public health state of emergency declared by the governor. The counties monitored by The Carter Center account for more than 60 percent of votes cast and audited. Completing forms specifically designed for the audit, Carter Center monitors systematically collected information on each step of the process, including the work of the two-person audit boards and the vote review panels, and the uploading of tally information into the open-source data collection system, Arlo. Except for a few instances where counties initially were not aware of the Carter Center's accreditation, the Center's personnel were welcomed by election officials and were able to conduct their monitoring activities without hindrance.

Election officials are to be commended for quickly transitioning from an RLA conducted with a sample of ballots to a full hand tally of all ballots — a risk-limiting audit with a zero risk limit. Carter Center monitors found that county election officials were generally adept at overcoming logistical challenges, including finding spaces large enough to conduct the hand tally in ways that would allow for transparency and guarantee ballot security, finding and training election workers, and handling large batches of paper ballots.

The secretary of state and county election officials conducted the RLA in an open and transparent way with rules outlining access and behavior for official party monitors, Carter Center monitors and public observers. In some counties, the presence of monitors and observers contributed to crowded conditions that made it difficult to observe public health guidelines on social distancing. In all counties observed by Center monitors, monitors from at least one of the two main political parties were present, with Republican monitors represented in greater numbers than their counterparts from the Democratic Party in many counties. Throughout its monitoring, the Center found that in some counties the behavior of Republican monitors appeared to be hostile to audit workers and, at times, disruptive to the counting process. Carter Center monitors frequently mentioned that party monitors did not seem to understand the RLA process.

Overall, county election officials did an admirable job of conducting the RLA even though, in some instances, actual counting procedures varied from the recommended counting procedures laid out in the Secretary of State's training video.

This report finds that the RLA confirmed the original results of the presidential election in Georgia and commends Georgia election officials for instituting a process that should serve as the basis for increased confidence in the electoral system in the state in the future. It also describes some of the flexible approaches and improvisation that occurred, including decisions to split large ballot containers, processes for documenting the chain of custody and for batching envelopes for vote review panels, as well as steps to divide up data entry work.

Based on its monitoring efforts, The Carter Center respectfully recommends the following:

- Develop a systematic, statewide strategy for ballot packing and storage, including ballot manifests.
- Develop reconciliation procedures specifically designed to handle increased numbers of absentee and early votes.
- Improve the layout and readability of both the hand-completed and the ballot marking device printed ballots.
- Strengthen public outreach and education about RLAs well in advance of the next major election in 2022.
- Consider increasing the use of volunteers from political parties to staff audit boards as well as the vote review panels.
- Provide training for party and independent monitors.
- Re-examine the design of scanner/tabulator ballot boxes to ensure that all ballot papers are more easily retrieved at the end of the voting process.

The Carter Center and the Audit

Following the November 2020 election, Georgia conducted its first state-wide risk-limiting audit (RLA). The legal basis for the RLA was put in place in September 2020 when the State Election Board (SEB) adopted a rule¹ requiring a statewide RLA with a risk limit of 10%, to be conducted following the November election in even-numbered years. The secretary of state (SOS) was to choose the contest for audit.² Prior to the November 2020 election, pilot RLAs had been conducted in Bartow County following local elections in November 2019, Fulton County following the June 2020 presidential primary, and in Glynn County following the August 2020 runoff election.

In late October, The Carter Center was accredited by the Georgia Secretary of State's Office to observe the RLA, which was conducted as a hand tally Nov. 13-18. In deploying independent, nonpartisan monitors for the RLA, The Carter Center hoped to bolster voter confidence in the state's electoral process by assessing the state's efforts to improve the transparency of its processes. The Center also envisioned conducting a thorough assessment and analysis to make recommendations for future RLAs. An internationally recognized leader in election observation, The Carter Center has observed 113 elections around the world. The Center's monitoring effort of Georgia's RLA was its first observation of election-related activities in the United States.

All Carter Center election observation missions are conducted in accordance with the Declaration of Principles for International Election Observation and Code of Conduct for International Election Observers, which were adopted at the United Nations in 2005 and have since been endorsed by more than 50 election observation groups.

Electoral Environment

Nationally, the 2020 election was characterized by hyperpartisanship and deep divisions, which were exacerbated by systematic campaigns of misinformation and disinformation. This was especially true in Georgia, a state deeply divided after more than 20 years of voting reliably Republican. While northern and southern parts of the state remain solidly Republican, since 2016, areas surrounding larger cities were increasingly supporting Democrats.³ With a population of more than 6 million people, the 39 counties that make up the Atlanta metropolitan area comprise one of the fastest-growing areas in the country according to the U.S. Census. This growth has been accompanied by demographic shifts, especially in suburban counties, with

¹ SEB Rule 183-1-15-04

² The state was required to conduct pilot audits prior to Dec. 31, 2021.

³ Demographic shifts in Henry and Rockdale counties helped Joe Biden win Georgia's presidential race. Tamara Hallerman, "How changes in Henry, Rockdale helped Biden capture Georgia," *Atlanta Journal-Constitution*, Dec. 30, 2020. <https://www.ajc.com/politics/how-changes-in-henry-rockdale-helped-biden-capture-georgia/LBT7R6QIXNEEPLFD2TMLTOC2W4/>

African American and Hispanic voters making up a growing percentage of the electorate. The political shift has also been attributed to generational shifts and growing educational divisions.⁴

For the first time in decades, Georgia was a “battleground” state, resulting in record amounts of political spending, which contributed to the tense environment surrounding the election and, subsequently, the RLA. This was especially true in the presidential race and in the two U.S. Senate races. President Donald Trump started running television ads in June and, between then and election day, both his and Democratic challenger Joe Biden’s ads saturated the airwaves. By early October, one month before the election, \$150 million had been spent or reserved on airtime for the state’s two hotly contested U.S. Senate races.⁵

When the RLA was taking place in November, both Georgia U.S. Senate races were headed into a runoff election that was held on Jan. 5, 2021. With control of the Senate dependent on the outcome of the runoff election, the divisive environment in the state continued, fueled by state and national political parties, as well as outside groups. The campaigns of the four candidates, national political parties, and outside groups such as super political action committees (PACs) spent more than \$800 million on political ads, mailers, canvassing and campaign rallies.⁶ The tone and content of the ads was, at times, negative and divisive.

The hyperpartisan environment was fueled by a steady stream of messages aimed at undermining the legitimacy of electoral processes. Since the 2016 presidential election, voters across the nation, including Georgia, had received a barrage of warnings about voter fraud based on little or no evidence. In the year leading up to the 2020 election, Trump repeatedly voiced unsubstantiated concerns over voter fraud associated with mail-in ballots as part of a broader disinformation campaign.⁷ Not surprisingly, this led to widespread acceptance of the false claim, largely by Republican-leaning voters.⁸ Concerns about voter fraud contributed to the atmosphere of division and suspicion surrounding the election and the RLA. It is worth noting, however, that a survey of Georgia voters conducted in late October found that 91% of respondents and 93% of Republicans surveyed felt confident that their votes would count as intended.⁹

It also should be noted that the election and the RLA hand tally took place during the 10th month of the COVID-19 pandemic, an unprecedented global crisis that became highly politicized in the U.S. At the time of the election, the number of coronavirus cases in Georgia was rising with a test positivity rate of 9.96%, nearly double the 5% positivity rate identified by the World Health

⁴ David Weigel and Lauren Tierney, “The six political states of Georgia,” *The Washington Post*, September 27, 2020. <https://www.washingtonpost.com/graphics/2020/politics/georgia-political-geography/>

⁵ Patricia Murphy and Greg Bluestein, “Georgia’s setting records for political spending in 2020,” *Atlanta Journal-Constitution*, Oct. 7, 2020.

⁶ Karl Evers-Hillstrom, “Georgia Senate races shatter spending records,” Jan. 4, 2021, Center for Responsive Politics <https://www.opensecrets.org/news/2021/01/georgia-senate-races-shatter-records/>

⁷ Newsguard, Special Report: Top Election Myths <https://www.newsguardtech.com/top-election-myths/>

⁸ Yochai Benkler, Casey Tilton, et al., Mail-In Voter Fraud: Anatomy of a Disinformation Campaign <https://cyber.harvard.edu/publication/2020/Mail-in-Voter-Fraud-Disinformation-2020>

⁹ University of Georgia, Center for Election Innovation & Research, Confidence in Georgia’s 2020-21 Elections, February 2021, <https://electioninnovation.org/research/>

Organization as too high.¹⁰ While Gov. Brian Kemp’s shelter-in-place orders issued earlier in the year had expired, people were urged to stay at home and the public health state of emergency remained in effect through Dec. 9, 2020. Despite rising rates of infection and public health warnings, compliance with guidelines limiting indoor gatherings and encouraging mask wearing and social distancing was uneven and, at times, a source of social tension.

The politicization of COVID-19 and public health responses contributed to the highly polarized, and sometimes very tense, environment in which the RLA hand tally took place.

Timeline of Events

October 30	Georgia Secretary of State and The Carter Center sign memorandum of understanding regarding independent observation of risk-limiting audit.
November 3	Election.
November 7, 8, 9	Training of Carter Center monitors for sampling RLA.
November 11	Secretary of State announces that RLA will be a hand tally of votes.
November 12	Secretary of State provides training for election workers and Carter Center monitors for the hand tally.
November 13	Training of Carter Center monitors on revised procedures for the RLA hand tally. RLA/hand tally begins in some counties. Deadline for counties to certify results of vote.
November 14	Hand tally begins in Atlanta metro counties (Cobb, DeKalb, Fulton, Gwinnett).
November 16	Hand tally begins in some smaller counties.
November 18	Counties meet deadline for hand tally.
November 20	Georgia election certified by the secretary of state and governor.

Election Management in Georgia

Like other Georgia statutes governing elections, the RLA statute specifically tasks the State Election Board (SEB) with promulgating rules to administer and implement the RLA. Composed

¹⁰ “Georgia Coronavirus Map and Case Count,” *New York Times*, <https://www.nytimes.com/interactive/2020/us/georgia-coronavirus-cases.html>

of five members, the SEB creates and enforces election rules, publishes election laws and educational materials, and makes recommendations to the General Assembly.¹¹

The SEB has the right to file its own lawsuit or intervene in another party's lawsuit filed in a state or federal court if the lawsuit involves a Georgia election statute or SEB rule. The SEB also has the authority to initiate administrative actions and impose civil fines for violation of election laws.

The relationship between the SEB and the SOS is envisioned as symbiotic, with the SOS serving as chairperson of the SEB. The SOS bears primary responsibility to implement and administer the state's election laws, as well as the rules promulgated by the SEB. Unlike some states, all counties in Georgia use the same voting equipment and the office of the SOS provides training to election supervisors and election workers. For example, the SOS provided training on how to conduct an RLA and, once the decision was made to focus on the presidential race, it provided election supervisors and workers with training on the procedures for conducting the hand tally.

Administration of Georgia elections requires cooperation between the SOS and county officials who have much of the responsibility for election operations. Most hands-on election activities are conducted by county election officials pursuant to Georgia's statutes and under rules promulgated by the SEB. Georgia has 159 counties and, of those, elections in 104 are overseen by combined boards of elections and registration, 51 are overseen by probate judges with boards of registrars, and four are overseen by an election supervisor and registrar. These election officials are responsible for issues that range from voter registration and absentee ballots, to selecting polling locations and hiring workers to staff elections. These local officials and boards are also responsible for conducting the voting and canvassing and certifying the election results at the county level.

Background on Georgia's Voting Systems

In 2002, Georgia adopted Diebold Accuvote TSX touchscreen machines, a direct recording electronic (DRE) voting system, for statewide use. DRE systems use computers that record the votes directly into the computers' memory. Voters' choices are stored on a cartridge or hard drive. Election results are tabulated based upon voting data stored in the computer's memory and, in some cases, DRE systems can also transmit data about individual ballots or vote totals to a central location for consolidating and reporting results.

The Diebold system was controversial from its adoption. The Diebold machines did not produce a paper record, and as a result, voters could not verify their choices on a paper record, nor could the results of the election be audited. Critics voiced concerns about numerous hardware and software issues, and the system was the subject of several lawsuits following its adoption.

¹¹ Members include the SOS, an elector elected by majority vote of the General Assembly, an elector elected by majority vote of the House of Representatives, a nominee from the Republican Party, and a nominee from the Democratic Party. In 2020, there was one Democrat on the SEB.

In 2019, the Georgia SOS procured new ballot-marking devices (BMDs) from Dominion Voting Systems, which were in place for Georgia's June 9, 2020, primary election. Unlike DREs, which record votes directly into computer memory, BMDs allow for an electronic presentation of the ballot and produce a paper ballot for voters to review and insert into a scanner which tallies the votes and saves the paper ballot. The paper ballot has a summary of voter selections in plain text and, in many cases, a bar code or quick read (QR) code that gets read and tabulated by an electronic scanner. Voter selections are neither stored, nor tabulated by the BMD, and BMDs are not connected to the Internet.

The selection of the Dominion voting system was also controversial from the start. Critics of BMDs point out that with plain text and bar codes or QR codes, the paper ballots contain two distinct records of voter intent which cannot be cross-checked by voters since the codes cannot be verified by the human eye. Critics also raised concerns about the likelihood of voters checking their ballots and catching errors. A 2020 University of Michigan study found that only 40% of voters checked the paper ballots produced by BMDs, and only 6% caught errors that were deliberately introduced as part of the study.¹² However, surveys conducted in Georgia during the November election found that 90 percent of voters said they reviewed and confirmed their paper ballots.¹³ It is important to note that the results of the hand-tally process were very close to the results of the initial machine count. This should help allay concerns about the accuracy of the BMDs and scanners used in Georgia's elections.

The rollout of the new system in June 2020 for the primary elections received national attention as voters in metro Atlanta, particularly in Fulton County in areas with predominantly minority populations, waited in line for hours, newly recruited poll workers did not know how to operate the voting equipment, and there was a lack of provisional ballots. According to a report compiled by the Georgia House Governmental Affairs Committee, the problems during the June primary were attributed to an unprecedented number of voters who had received absentee ballots deciding to vote in person, insufficient training for poll workers on how to operate the new equipment, and difficulty recruiting poll workers during the pandemic.¹⁴ In addition, the pandemic reduced the number of available polling places, and safety measures contributed to a reduction in training opportunities and longer waits for voters on election day. Prior to the November election, the secretary of state's office worked with local election officials to address these issues. The state took measures to facilitate voting, such as creating an online portal for voters to securely request absentee ballots. Fulton County, which had numerous problems during the primary, added more than 200 polling sites and state officials collaborated with the nonpartisan organizations to recruit tech-savvy residents to serve as poll workers and deputy

¹² Matthew Bernhardt, et al., "Can Voters Detect Malicious Manipulation of Ballot Marking Devices," 2020 IEEE Symposium on Security and Privacy (SP), 18-21 May. San Francisco, CA, USA.

<https://jhalderm.com/pub/papers/bmd-verifiability-sp20.pdf>

¹³ University of Georgia, Center for Election Innovation & Research, Confidence in Georgia's 2020-21 Elections, February 2021, <https://electioninnovation.org/research/>

registrars.¹⁵ As a result, early voting and election day in November occurred largely without incident. It is within this larger context that the risk-limiting audit took place.

Postelection Audits and a Risk-Limiting Audit (RLA)

Postelection audits have long been a fixture of American elections. They are a way to check whether apparent winners did in fact receive the most votes, to identify system malfunctions or cybersecurity issues, to foster continuous improvement in election procedures, and to increase citizens' confidence in the integrity of the voting process. Postelection audits are typically conducted in a transparent fashion that is open to members of the public, the media, and representatives of political parties.

In states that require them, postelection audits usually take place during or after canvassing (the summing up and cross-checking of reported results) and before the certification of results. Some percentage is set, usually between 2% and 5% of precincts or voting machines, to be reexamined to validate the election result. The selection of specific precincts or voting machines may or may not be public, which can raise potential transparency problems. Also, the required percentage is established without regard to the margin of victory in a particular election. This can lead to inefficiency when too many votes are checked, or lack of confidence if too few votes are checked. Finally, the statutes that establish most audits rarely specify what to do if the result in the sample recounted does not match the original election result.

For these reasons, statisticians set out to develop an improved audit process that addressed these problems of efficiency, transparency, and selection method, and which could guarantee, within a specified risk limit, that the winner of the original tally was indeed the voters' choice.

The technique developed over the past decade, and now considered the gold standard for election auditing, is referred to as a "risk-limiting audit" (RLA), which compares the results from a hand count of a statistically random sample of ballots cast with the results recorded by vote-counting equipment.¹⁶ An RLA requires paper ballots. Auditors must be able to look at original ballots, including both hand-marked absentee and provisional ballots, and those printed out for the voter's review from a BMD. Typically, RLAs reduce the number of ballots that need to be audited and provide statistical confidence that an incorrect election result will not be certified.

In an RLA, the number of ballots to be audited depends on both the margin of victory and the chosen "risk limit," the chance that the audit will fail to detect and correct an incorrectly reported election outcome.¹⁷ Specific risk limits are determined by state statute and typically range

¹⁶ Amy Sherman, "Voting Counts: Georgia's primary ended in a meltdown in June. Will it on Nov. 3?" *Politifact*, Sept. 8, 2020, <https://www.politifact.com/article/2020/sep/08/voting-counts-georgias-primary-ended-meltdown-june/>

¹⁷ There are two varieties of RLA. For a "ballot comparison" audit, individual ballots are compared with the machine interpretation of that same ballot. This requires that each ballot be uniquely identifiable. This type of RLA is used in Colorado. In Georgia, there is no identifier on each ballot, so only a "ballot polling" RLA is possible. A random sample of ballots is drawn, and the result for the sample is compared to the original result. For the same risk

between 4% and 10%. The list of individual ballots to be checked (e.g., the 20th, 87th and 205th in sequence in a batch) is determined by a random generator process. To date, RLAs have been used or piloted in about a dozen states.

In 2020 Georgia's State Election Board adopted an RLA requirement to increase citizen confidence in the integrity of the state's election process. The state is to be commended for adopting a voting system that produces paper ballots and implementing the technically accurate and efficient RLA method of postelection auditing.

It is important to note, however, that while an RLA can assess the integrity of the election process once a vote has been cast, it does not address a range of other issues related to access to and integrity of the electoral process. Such issues include voter education on procedures and deadlines, voter ID requirements, procedures for registering to vote or changing address, determination of the eligibility of voters, the procedures in place to ensure legality of the ballots (e.g., signature match requirements), the location and accessibility of voting locations, and availability of early or mail-in voting or other practices or processes that might inhibit or prevent voting. Other methods of assessment (e.g., long term election observation) would be required to fully evaluate the implementation of those issues.

Georgia's Preparation for a Sampling RLA

Georgia began preparing for an RLA before the June 2020 primary election. The Georgia Secretary of State contracted with VotingWorks, a nonpartisan national organization with extensive experience in postelection audits, to assist as an advisory partner with the implementation of RLAs in Georgia. Over the last year, VotingWorks has assisted with pilot RLAs in Georgia counties (Bartow, Fulton, and Glynn counties) and training on RLAs processes and procedures. During the pilots, the SOS and VotingWorks provided on-site RLA support. To conduct the RLA, VotingWorks provided risk-limiting audit software (Arlo), which manages the information flow throughout the audit process. During the RLA, VotingWorks provided support for the Arlo software and provided technical support to the counties as needed. VotingWorks also provided training and RLA materials to the SOS to run RLAs independently for future elections.¹⁸

Because an RLA requires that each ballot be locatable, the process of organizing and storing ballots for an RLA is more involved than for a traditional audit. For an RLA, every individual ballot must have a storage location described in a ballot manifest created by local election officials using a simple spreadsheet that describes the storage arrangement. For each county, the ballot manifest lists all ballot containers by name or number, the batches of ballots within each container, and the number of ballots in each batch. The total numbers of ballots listed on the manifest should be reconciled to the numbers of voters shown in the pollbooks.

As a practical matter, the logistical ease or difficulty of pulling ballots for audit is inextricably tied to decisions about organizing ballots for storage such as how many containers to use and the

level, far fewer ballots must be selected in a comparison audit than in a ballot polling audit. Since Georgia uses ballot polling, only that variety of RLA is described here.

¹⁸ Communication with Blake Evans, deputy Elections Division director, Georgia Secretary of State's Office, Dec. 17, 2020.

numbers of batches and ballots in each. It is easier to find specific ballots (e.g., the 35th or 87th in sequence in the batch) out of a batch of 100 than out of an undivided container of 2,000. The organizational arrangement should be chosen to facilitate retrieval of individual ballots at audit time and must be clearly documented in the ballot manifest.

Counties began planning their storage arrangements and creating their ballot manifests well before the Nov. 3 election and updated them over time as voting proceeded during early voting, which was conducted Oct. 4-30. During this period, voted ballots were generally grouped for counting and storage in small batches by date. For absentee ballots, the Secretary of State's office directed counties to create batches of not more than 100. RLAs depend on secure storage and careful recording to maintain the chain of custody of the ballot from voter to audit.

Election day voting presented some different storage and ballot manifest challenges. Each precinct had one or two scanner/tabulators, and in some the attached ballot boxes contained more than 1,000 ballots. Prior to the election some consideration was given to splitting these precinct boxes into more manageable units to facilitate ballot retrieval during the RLA. However, concerns about the chain of custody of the ballots weighed against this option.

Another factor influencing decisions on storage was not knowing which race would be selected for the RLA or how big the margin of victory would be. There were two U.S. Senate races: one special election to complete the final two years of retired Sen. Johnny Isakson's term, pitting incumbent Republican Sen. Kelly Loeffler against Democrat Rev. Raphael Warnock, and a regularly timed election in which incumbent Republican Sen. David Perdue was being challenged by Democrat Jon Ossoff.¹⁹ If the special election was selected for the RLA, VotingWorks estimated that only about 1,900 ballots would need to be pulled for the sample statewide, based on margins identified in pre-election polling. If the other senatorial race or the presidential race were selected, many more ballots would need to be pulled for the RLA sample. It would not be difficult to retrieve ballots early in the sequential order called for in a sample, for example the fifth or 73rd ballot, out of large batches by simple counting. However, given the difficulties entailed in retrieving ballots toward the end of the sequential order in a sample, such as the 783rd ballot, alternative techniques are used, such as weighing ballots or using statistical methods to approximate the location of the requested ballot. After counting, ballots that were selected and pulled for audit were to be stored in a separate container rather than reinserting them in their original containers and batches.

Prior to the Nov. 3 election, preparations for Georgia's RLA focused on conducting a sampling RLA in which Arlo would specify how many ballots must be sampled to reach the risk limit given the margin of victory. After determining how many ballots to sample, Arlo would generate a statistically random sample from among all ballots in the state and the county ballot manifests would be used to identify and list the individual ballots to be retrieved and reviewed in selected counties.²⁰ After county election workers retrieved and (re)counted the specified ballots, they

¹⁹ A total of 20 candidates competed in the first round of the special election.

²⁰ True statistical randomness is approximated by using a pseudorandom computer algorithm. In the procedure typically used by states that have adopted the RLA, 20 people each toss a 10-sided die. This produces a 20-digit

would enter the results into Arlo, and the RLA algorithm would determine whether the risk limit had been met. If the risk limit had not been met, additional “rounds” of sampling would be conducted until it was met. In this sense, the RLA was an “incremental audit” that could, in theory, result in a full hand tally in the case of a very close election.

The Full Hand Tally, Zero-Risk-Limit RLA

Under the terms of SEB Rule 183-1-15-.04 the secretary of state had to decide which statewide race to audit following the Nov. 3 election — the presidential race or one of the two senatorial races. On Nov. 11, after all counties had prepared and reconciled their ballot manifests, Secretary of State Brad Raffensperger announced that the presidential race had been selected for audit, and that the RLA would entail a full manual tally of ballots cast, a decision that had both practical and political implications.

The margin of victory for Biden was 0.3% (three-tenths of 1%), which under the RLA algorithm with a 10% risk limit would mean sampling approximately *1.5 million* ballots²¹ statewide, or 25 percent of all votes cast. At a certain point, with only nine days before certification on the 20th, carefully retrieving 1.5 million specified ballots would be nearly impossible. The process would be very slow as election workers, many newly recruited and not previously trained, followed lists generated by Arlo to pull the needed ballots. It is more efficient in terms of both time and effort to audit every ballot than to do a random audit of a such a large number of ballots.²² A full hand tally is essentially an RLA with a risk limit of zero.²³

The political considerations were even more daunting. With such a close vote, and with Georgia’s status as a battleground state that might determine the outcome of the presidential race, emotions and suspicions were running high. And RLAs are new to Georgia. Even though several counties piloted RLAs in the year before the 2020 election, there had been little educational outreach to political parties or nonpartisan observers explaining what an RLA was, the theory of sampling, how the number of ballots to be sampled would be determined, or how individual ballots would be chosen for audit. Even if national political parties understood the RLA mathematics, explaining the process to 159 counties’ party organizations and training the party observers who would watch the audit was a task even more daunting than preparing the election staff to conduct the RLA.

number, the “seed,” which is entered into the computer algorithm, which in turn generates the list of ballots to be pulled for audit. The program automatically generates a “work order” for each county, for example, “Pull Container 3, Batch 4, the 43rd ballot in the batch; Container 6, the 823rd ballot in the stack,” and so on. The selection process is transparent. Any interested person, using the same open-source pseudorandom number program and plugging in the same seed, will get the same list of ballots. There is no mystery or bias in the ballots selected. This is likely the procedure that will be used in Georgia’s future biennial sampling RLAs.

²¹ The 1.5 million number was provided by VotingWorks. This agrees with an estimate by Gregory Miller in “Game of Margins—Part II,” Nov. 13, 2020.

²² According to Philip Stark, the threshold for moving to a full hand recount is as low as 10-20% of total votes. https://youtu.be/gMbzo_dizoA?t=8589

²³ “Principles and Best Practices for Post-Election Tabulation Audits,” December 2018.

<https://electionaudits.org/files/Audit%20Principles%20and%20Best%20Practices%202018.pdf>, p. 21

One of the main purposes of any postelection audit is to give the public confidence in the integrity of the election; therefore, public understanding of the process is especially critical. Given that there had not been any real public education about the RLA and in the context of a hyper partisan environment, even the most meticulous and transparent RLA with a 10 percent risk limit would likely have been received with suspicion and acrimony. In these circumstances, public confidence in Georgia's election process might even decline. Conducting a full hand tally, which is essentially an RLA with a risk limit of zero, would be much simpler to conduct and more understandable to the public in Georgia and the county.²⁴

The secretary of state has been criticized for conducting a process that did not seem to fall neatly into any one category of audit. Some of this comes from initial statements that referred to the full hand tally as an audit, a recount, and a recanvass.²⁵ A recanvass is a recounting of votes at the county level to make sure the correct numbers were sent to the state's board of elections. Under Georgia law, an official "recount" takes place *after* certification of results at the state level and involves rescanning all ballots.²⁶ An audit, on the other hand, assesses the integrity of the process and the correctness of the outcome. A sampling RLA simply confirms (or does not confirm) the outcome of the original tabulation. In general, it does not generate a new number for the results, except in the case of an RLA conducted in a very tight race, which can entail multiple rounds of ballot selection that eventually lead to a full hand recount; or if there is an original decision to choose a risk limit of zero.

The remainder of this report addresses the conduct of the RLA audit/hand tally as it took place Nov. 13-18.

Audit, Hand Tally Process Workflow

Following Secretary of State Brad Raffensperger's Nov. 11 announcement that the RLA would be a full hand tally, the secretary of state's election office and election superintendents in the 159 counties quickly developed procedures for conducting a hand recount rather than a sampling audit. Prior to the start of the audit on Nov. 13, election staff were trained using a video prepared literally overnight by the office of the secretary of state and VotingWorks. The training video delineated the procedures described below. While each county had already prepared its ballot manifest and stored its ballots in a system documented in the manifest, there were no instructions for how to use the ballot manifest during a hand tally, or indeed whether to use it at all.

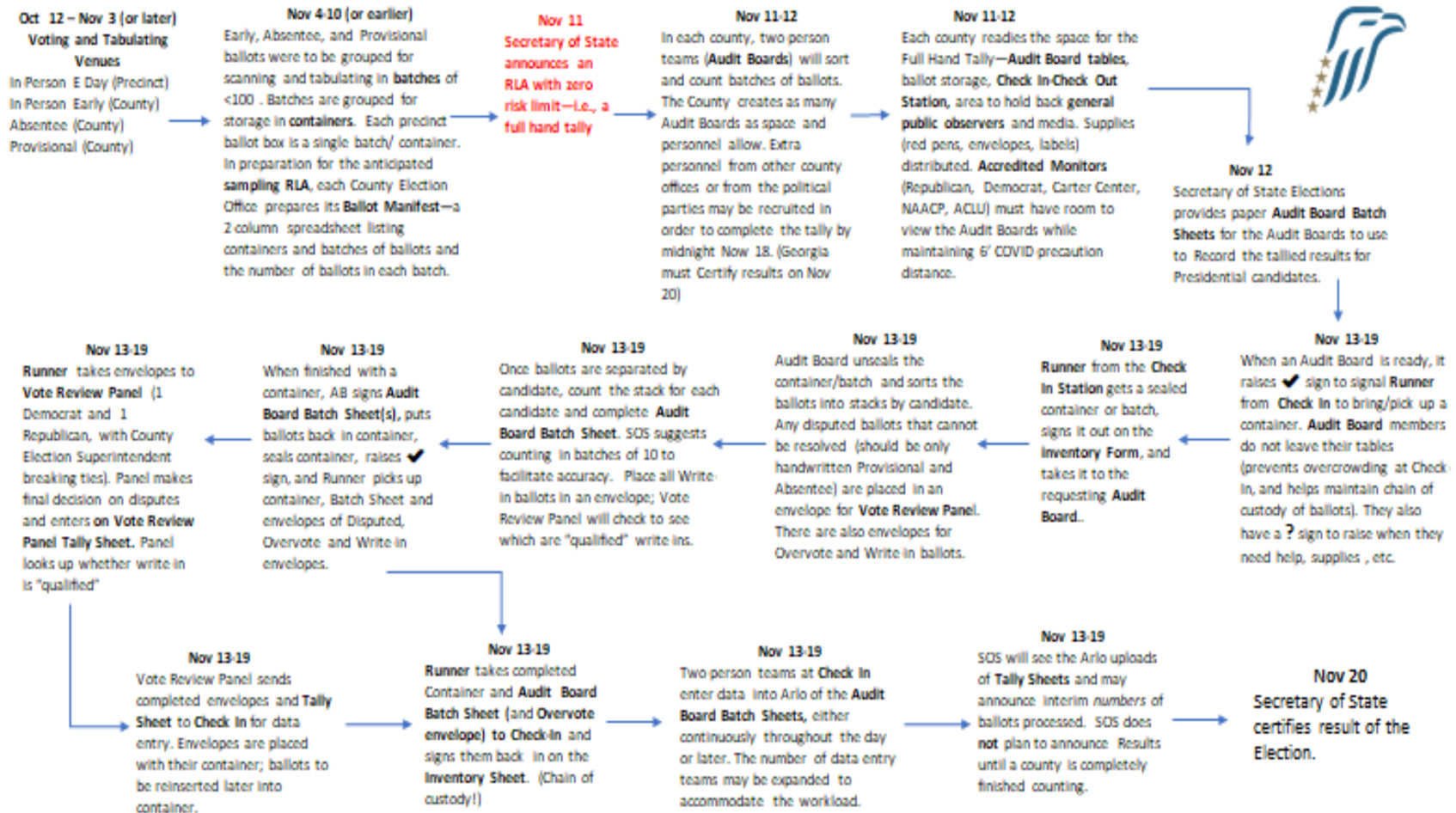
²⁴ With a full hand recount, there was no need for rolling dice to generate a Seed for a pseudorandom selection of ballots.

²⁵ Timothy Pratt, "Why Georgia's Unscientific Recount 'Horried' Experts," *The Nation*, Nov. 11, 2020. <https://www.thenation.com/article/politics/georgia-recount/>

²⁶ The statutory recount was conducted, at President Trump's request, Nov. 24–Dec. 3.

Process Flow for Full Hand Tally of November 3, 2020 Presidential Election

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As originally planned, the check-in/check-out function was to be the hub of each county's operation, where the flow of ballot boxes and the process of data entry would be centered. Ballot boxes were to be stacked in a secure room or area with check-in staff preventing unauthorized entry into the storage area and providing security for the ballot boxes. Check-in staff would maintain a log of each container checked out for counting by an audit board and checked back in again when completed. Data entry was envisioned as a two-person function located at the check-in area.

Two-person audit boards, organized and assigned by county election staff, would sort and count the ballots. Audit boards were initially staffed by election and other county staff. As the extent of the workload became clear and each county expanded the number of audit boards, polling workers and other available personnel were recruited. In three counties, the parties were asked to send workers to staff the audit boards. Audit boards would be seated at worktables on the audit floor, spaced to minimize COVID-19 risk and to allow monitors and election staff to circulate.

To minimize movement around the audit floor and prevent a crush of people at the check-in table, which would compromise ballot box security, audit board members were to remain at their tables. When ready to receive or return a ballot container, the audit board would raise a sign with a checkmark on it and a runner from check-in would log out a container and take it to the requesting audit board. The ballot container was supposed to remain sealed until opened by the receiving audit board. Each audit board was given a batch sheet to record the results of their tally and envelopes to use for ballots with write-in candidates, duplicated ballots (created if the original was damaged), and disputed ballots. After completion of counting, the audit board would reseal the box, placing a batch sheet with the tabulated result on top outside the container, and then signal for pickup.

The vote review panels were composed of one Republican and one Democrat. They were charged with reviewing write-in votes, damaged and duplicated ballots, and those for which the voter's intent was unclear. The election superintendent would join the panel in cases where the two party members could not agree on handling the ballot.

The runner would pick up the sealed ballot box, batch sheet, and the envelopes, deliver the envelopes to the vote review panel, log the ballot box back into check-in, and give the batch sheet to data entry. When the vote review panel completed its review, the runner would collect the envelopes and return them to check-in where the ballots would be reunited with their container.

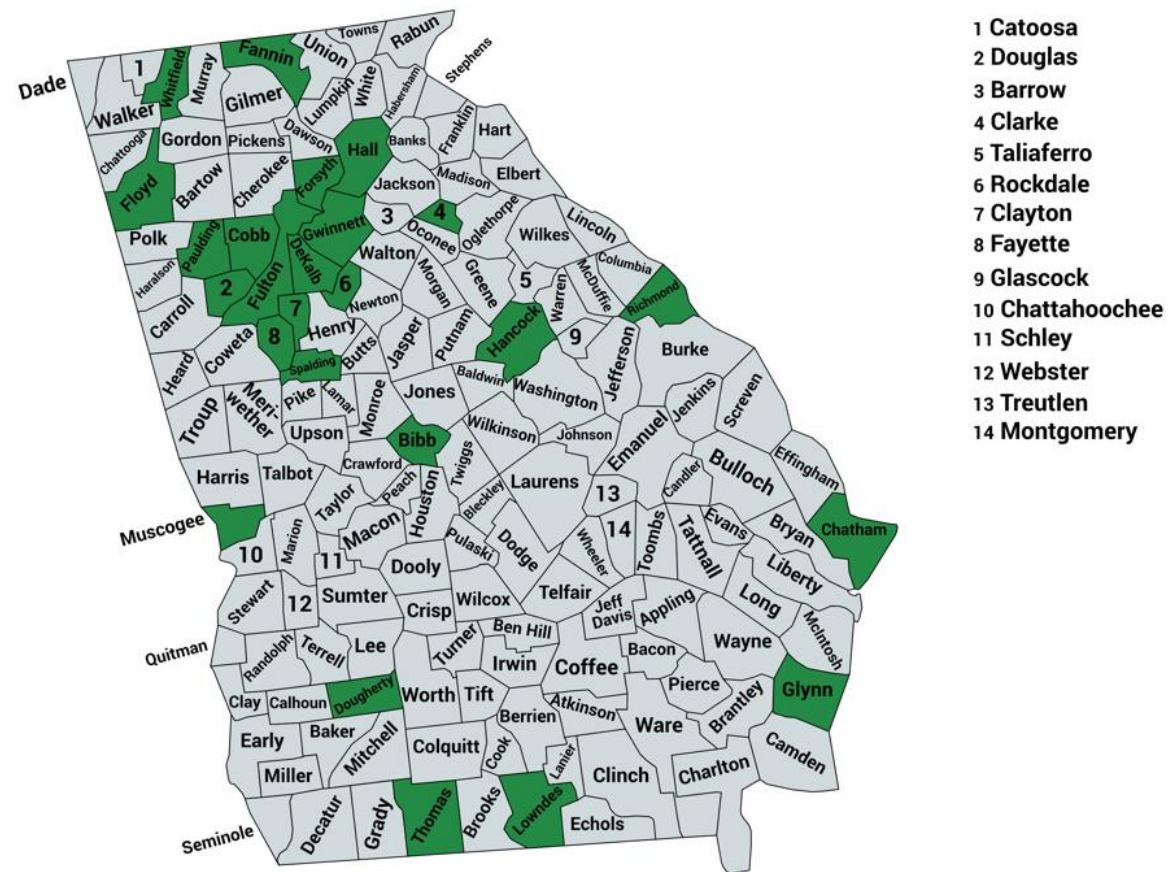
Overall, the secretary of state's office and county election officials should be commended for transitioning from the originally planned sample-based RLA to the full hand tally in a very short period of time and in a tense political environment. From the announcement of the hand tally on Nov. 11, counties had less than 48 hours to prepare before the hand tally counting started on the morning of Nov. 13. Seventeen of the 25 counties observed began auditing on Friday, Nov. 13. Others began on Saturday, Nov. 14, and some of the smaller counties, having fewer ballots to count, started on Monday morning, Nov. 16. The deadline for all counties to complete the full hand tally was 11:59 p.m. on Nov. 18.

Deployment of Carter Center Monitors

The Carter Center recruited and trained 52 monitors for the mission. Monitors were deployed Nov. 13-18 to 25 of Georgia's 159 counties to assess the RLA hand tally. Counties were selected based on voting population, geographic representation, and with a mix of both urban centers and rural areas. With 5,025,683 votes cast statewide, the counties where Carter Center monitors were present accounted for 60.27% of the total vote in Georgia.

Counties began and finished auditing on different days and some did not work on Saturday, Nov. 14, or Sunday, Nov. 15. The length of workdays during the hand tally also varied by county with start times as early as 8 a.m. and ending times as late as midnight. Depending on county size and monitor availability, one to six monitors were assigned to each of the 25 counties during most days of the hand tally. Some observers served on multiple days, some in the same county, others in different counties. In total there were 60 audit days observed and 117 observer days deployed.

Deployment Map



Created with mapchart.net

Number of Carter Center Monitors Deployed by Date and County

	Fri 11/13	Sat 11/14	Sun 11/15	Mon 11/16	Tue 11/17	Days Observed	Observer Days	Votes Cast in County	% State Vote Share
Bibb	1	1		3		3	5	70,802	1.42
Chatham	2	2	2	N/O		3	6	133,420	2.67
Clark	1	1		1	1	4	4	51,333	1.03
Clayton	2	2		2	2	4	8	122,344	2.45
Cobb	6	4	5	1	4	5	20	393,746	7.88
Dougherty	1	N/O	N/O	1	N/O	2	2	35,311	0.71
DeKalb		5	4			2	9	370,804	7.42
Douglas	N/O	N/O	N/O	2		1	2	69,097	1.38
Fannin	1	N/O				1	1	14,850	0.30
Fayette	2	N/O	N/O	1	N/O	2	3	71,993	1.44
Floyd*	N/O	N/O			1	1	1	41,648	0.83
Forsyth	1	1	1			3	3	129,305	2.59
Fulton		5	5			2	10	524,659	10.50
Glynn	1			1		2	2	41,984	0.84
Gwinnett	4	6	3	3	2	5	18	413,865	8.28
Hall	1	2	N/O			2	3	90,523	1.81
Hancock	1	N/O	N/O			1	1	4,165	0.08
Lowndes	1	1	1	N/O		3	3	46,355	0.93
Muscogee	1	1	1	1		4	4	80,543	1.61
Paulding	N/O	N/O	N/O	2	N/O	1	2	85,385	1.71
Richmond	N/O	1	N/O	1		2	2	87,016	1.74
Rockdale	2	1				2	3	44,686	0.89
Spalding	N/O			1	1	2	2	30,116	0.60
Thomas	N/O	N/O	N/O	1	N/O	1	1	21,853	0.44
Whitfield	1	1				2	2	36,746	0.74
TOTALS	29	34	22	21	11	60	117	4,998,482	60.27

N/O = No observation during hand tally day

Hand tally had not started, had been completed, or was not taking place on this day

* Carter Center monitor went to Floyd County after uncounted votes were discovered.

Throughout the mission, the Center's trained monitors used checklists that prompted them to record both quantitative and qualitative data on the audit process. Each monitor had forms to complete for observation of individual audit boards and vote review panels (see Appendix C). During training it was suggested that monitors sample several audit boards and VRPs during the hand tally. In some counties, election superintendents limited the amount of time that an individual audit board could be observed. Each monitor typically recorded observations on between two and six audit boards. There were fewer vote review panels in operation and monitors typically recorded observations on one or two. The team of between one and six monitors assigned to a particular country on each day was also asked to complete a single general observation form, reporting on the overall operation, workflow, and atmosphere. All monitors were encouraged to document any irregularities, challenges, changes in procedures, or solutions to problems that they witnessed.

Monitors submitted 509 audit board reports and 96 vote review panel reports, which in some cases reflected multiple reports on the same audit boards or vote review panels, covering different time periods. Monitors also submitted 54 general observation forms covering 23 of the 25 counties where the Center was present. Additional information was obtained during two virtual debriefing meetings with monitors that took place during the week following the RLA. From the debriefs and handwritten comments added on the observation forms, The Carter Center compiled consolidated comments by county.

It should be noted that when the secretary of state made the decision to focus the RLA on the presidential race and the process became a full hand tally, there was some confusion about the terms "observer" and "monitor." The procedures outlined in the secretary of state's training video designated official political party monitors, who could move among audit boards and voter review panels to watch the recount. The designation of "monitors" was also accorded to The Carter Center. A separate and distinct category of public "observers" was also allowed to watch the recount, but from a designated viewing area located farther away from the check-in/check-out table, the audit boards, and the vote review panels.

Under the terms of The Carter Center's MOU with the secretary of state's office, The Carter Center was granted full access to the RLA process. However, the credentials the SOS provided to The Carter Center included the term "observers." The mix of terminology led to confusion at the county level with some Carter Center personnel being initially relegated to public viewing areas, because they were assumed to be in the same category as public "observers." Fortunately, in each case when The Carter Center informed the secretary of state's office of the problem, they promptly contacted county officials to ensure Carter Center personnel were treated correctly as "monitors" and given the same access as monitors from political parties.

Despite some initial confusion, Carter Center personnel had full access to watch the RLA hand tally as monitors. To avoid any confusion on this point, throughout this report, we use the terms "Carter Center monitors," and note that they had the same access as party monitors. Public observers, on the other hand, had more limited access.

Logistical Challenges

The abrupt change in the RLA process and the short preparation period presented logistical challenges for county election staff in terms of training personnel and procuring spaces large enough to accommodate secure ballot storage and distribution, data entry, auditors, monitors and public observers,

Space – In many counties, election office spaces were not adequate for conducting the operation. In addition, to adhere to Covid-19 guidelines, the spaces had to be large enough to allow for social distancing. County election superintendents moved quickly after the secretary's announcement to collaborate with other county officials to obtain space in city and county buildings, courthouses, schools, and warehouses. Then, they had to move all the ballot boxes to the procured space, and arrange enough workspace, tables, supplies, and equipment for the two-person audit boards, vote review panels, a ballot box check-in/check-out function, and the data entry personnel. Audit boards themselves needed to be separated, and in the interests of transparency, political party monitors and Carter Center monitors needed the ability to circulate among the audit boards while maintaining a 6-foot distance.

Carter Center monitors reported that all the audit boards they assessed were supplied with materials and had table space to work. In some counties, the tables could be well-separated; in other places with less floor space, audit spaces were cramped. This reduced the number of audit boards that could be used and increased the risk of COVID transmission.

Staffing and Training – Training enough staff to manage and conduct the full hand recount before the certification deadline was a challenge for county election superintendents. The secretary of state and VotingWorks on Nov. 13 provided a 60-minute training video covering audit board sorting and counting procedures. There was no comparable video for vote review panel members, and it is unknown how vote review panels and check-in staff were trained.

The initial number of audit boards in each county was based on the available personnel (largely elections and other county employees), the number of ballots to be recounted and assumptions about the speed of processing. However, many counties found that they had to recruit extra personnel (other county workers, polling workers) to staff more audit boards as the audit progressed and the pace of work required to meet the deadline became clearer. For example, Clayton County expanded from 10 audit boards to 28. Carter Center monitors reported from 139 to 174 audit boards in Fulton County and 50 to 153 in Gwinnett at various times. As a result, many election workers, particularly those who staffed audit boards, had to learn the process on the job. In one county, the Carter Center monitor specifically noted the county's expansion training strategy as breaking up audit boards and pairing an experienced member with a new recruit. Other counties may well have employed the same approach.

Vote review panels were staffed by volunteers, one Republican and one Democratic member, recruited by the parties. In three counties where the Center monitored, party organizations were asked to send volunteers to staff audit boards as well as the vote review panel.

The need to expand staffing during the process had a variety of impacts that were noted by Carter Center monitors. Sorting and counting were more efficient and systematic on the first day when only experienced election workers were involved. When new workers arrived, there was greater variability in practice and less efficiency in the procedures for sorting ballots and counting until they learned the system. Not all election superintendents had time for more than quick training for the new recruits or showing the secretary of state's training video. Fulton county played the video on a continuous loop on a large screen so it could be seen by public observers as well as election staff.

For the first full hand recount in Georgia, and the largest anywhere in the U.S., it was not easy to predict the speed of sorting and counting or anticipate all the potential bottlenecks. Carter Center monitors reported that election superintendents were adept at moving personnel around (e.g., increasing the number of data entry operators or vote review, panel members, closing an audit board to use members as runners) to even out the workload and prevent bottlenecks. They are to be commended for adaptive management.

Although it was conducted with very little time to fully prepare, the audit provided useful information about the speed of sorting, counting and data entry, and where bottlenecks occurred in the overall workflow, which can inform future process and personnel planning. County election officials are experienced at handling and counting ballots, and in future exercises where they are likely to have more than 48 hours to prepare, staffing and training for a typical RLA are not likely to present difficulties. The process of preparing ballot manifests (completed prior to the decision to hold a full hand tally) appears to have gone smoothly.²⁷

Hand Tally Process

Despite all the challenges of organizing the full hand tally on such short notice and considering some of the *ad hoc* variations in process noted below, the 25 counties observed were generally quite successful in conducting their operations. Eighty-six percent (44 out of 51) of Carter Center monitor daily general observation forms indicated that the overall process as well-managed and 81% described the check-in/out process as well organized. Anecdotally, election workers seemed proud of their work and looked forward to the audit showing that they knew what they were doing. Several election staff asked to see the Carter Center's final report in order to receive feedback and suggestions for improving processes going forward.

²⁷ All counties made their storage decisions and prepared their ballot manifests by Nov. 10, before Carter Center monitors were recruited and accredited, so the preparation process was not directly observed. However, during downtime on audit days, Carter Center monitors were able to interview election superintendents in 15 counties to ask about the process. Most of the officials in the counties surveyed said they were comfortable with the process of preparing the ballot manifest, although the upload of spreadsheets to Arlo occasionally required some assistance from the secretary of state or VotingWorks. The outcome of the storage/manifest process was also evident to Carter Center monitors, when containers of ballots were brought to audit boards, and as recount totals were matched against manifest totals.

Even though election officials faced a daunting task, Carter Center monitors were almost uniformly positive in their descriptions of the overall atmosphere in each county. “Calm, professional, and cheerful” were the adjectives most often reported. Other monitors reported “enthusiastic,” “great energy,” “positive atmosphere” and “process streamlined and professional.” “Hectic” was only occasionally reported, and “confused” was sometimes used in reference to initial confusion that took place before the election superintendent could explain a process.

Although Carter Center monitors noted variation in the actual methods used to tally votes, overall, the process met the requirements of an RLA with a risk limit of zero. The section below describes some of the challenges and variations in counting procedures and workflow.

Audit Boards – Audit boards are two-person teams charged with the sorting of ballots and then counting the sorted batches of ballots. The process was designed so that each ballot would be seen by two people who confirm the sorting and the count. The number of audit boards varied across and within counties, depending on the number of ballots to be counted, the speed of counting, the availability of personnel, and the physical space available to conduct the process.

In the counties observed, the maximum number of audit boards reported by Carter Center monitors ranged from two in Hancock County to 174 in Fulton County. Not all audit boards were always staffed. Carter Center monitors almost uniformly reported that county election staff were knowledgeable and very responsive in circulating around the audit floor and answering questions from audit boards. In 80% of Carter Center monitor overall reports, election superintendents were reported as conducting troubleshooting.

The training video produced by the Office of the Secretary of State and VotingWorks demonstrated a method for counting ballots in which one member of the audit board picked up a ballot and called out the candidate's name followed by the other confirming the name and placing the ballot in the appropriate pile. This was done so that two people had eyes and hands on each ballot. Counting was to be by tens, with groups of 10 ballots stacked in a crisscrossed fashion to facilitate adding up the groups. This was treated as the official process (with particular emphasis on stating the candidate's name aloud), although other ways of counting could be equally accurate.

Sorting ballots by candidate went very quickly, especially for the early voting and election day batches, both of which were voted on the BMDs that produced printed ballots. However, in DeKalb County there were several complaints from audit board members about the legibility of the printed ballots. Sorting of the handwritten absentee and provisional ballots was slower, but still relatively fast. For both ballot types, sorting could be quick because the contest at issue, the presidential race, was at the top of the ballot.

In practice, the counting and sorting procedures varied widely. In 18 of 23 counties, Carter Center monitors reported the use of variations in procedures. While the counting practices used by audit boards often differed from those depicted in the training video, Carter Center monitors did not report any discernable impact of these variations on the overall quality and integrity of the process. Sometimes one audit board member sorted and the other counted. Sometimes the

candidate's name was called out, sometimes not. In some audit boards, the members independently sorted and counted. In others, one member would count and then the other member would recount. In another case, one member sorted and called out the candidate names while the other watched. In one county the election superintendent made an audit board start over because the two team members were counting independently instead of looking at each ballot together. Others counted ballots in groups of 20 or 25. Other audit boards did not follow the official procedure for counting, but double-counted everything. Audit boards seemed to be trying for efficiency and would develop a rhythm in whatever system they were using. They would revert to the procedure illustrated in the training video when reminded by election officials, at least for a while.

Batch Size and Large Containers – Despite instructions to pack absentee ballots in small batches, some counties had absentee ballot batches larger than 1,000 ballots. Rockdale County, for example, packaged absentee ballots based on the day of arrival; as election day neared and the number of absentee ballots arriving increased, the batches became much larger.

As expected, precinct ballot containers in every county were very large, with some containing over 2,000 ballots. In Forsyth County, a Carter Center monitor reported a container, most likely from election day, so tightly filled that it was difficult to get all the ballots out to count and then get them all back in again.

Counties employed two different strategies for handling these batches. Some divided large batches among several audit boards, which required extra attention to tracking sub-batches and logging them back in to check-in. Other counties required one audit board to complete the entire box, even if it meant no breaks or staying late. The latter approach led to a different set of follow-on consequences for the workflow as check-in and data entry might have little to do while waiting for completion of large boxes.

Counting large containers of votes was challenging regardless of the procedure utilized. In 11 of the 23 counties for which audit board activity was observed, Carter Center monitors reported problems. Carter Center monitors in three counties specifically noted audit board member frustration and exhaustion related to dealing with large batches. Exhaustion led to errors that, in turn, necessitated recounts. One audit board dealt with exhaustion by having one member continue counting while the other took a break.

To speed completion of a large box, the contents were sometimes divided among several Audit Boards. This seemed to be done most often near the end of the day when there was pressure to finish for the day and one large batch was outstanding. While faster, this introduced its own challenges in terms of recording the vote. The sizes of the subdivided batches varied, and, in some cases subdivided batches were counted in different ways. Chain of custody was also a potential problem when ballots from subdivided batches were distributed to more than one audit board.

In six counties, monitors observed audit boards comparing their total ballot count for the batch to the total number of votes reported on either the ballot manifest or the original tabulator count and

counted again if the totals did not match.²⁸ (Audit boards had no information about the candidate totals from the original tabulation.) While not formally part of the RLA hand tally process, Carter Center monitors noted that the comparison against the ballot manifest was a check to ensure that no ballots were misplaced during the dispersed counting.²⁹

When the ballot count differed from the ballot manifest or original tabulation number, as often happened with the large batches, the batch was recounted, sometimes by the same audit board, sometimes by another. In two counties, Carter Center monitors witnessed audit boards spending up to four hours sorting, counting, and recounting large boxes of ballots. In one case, a batch was counted three times by separate teams and came up 20 ballots short each time. Election officials then went back to the warehouse to check the ballot box on the scanner/tabulator and found the 20 missing ballots stuck inside the box. Similarly, in another county the first recount was 44 ballots short of the total on the ballot manifest. A second recount reached the same result, so another audit board was called over to count again. The missing ballots were eventually located in the warehouse in the write-in tray of the scanner.³⁰ In contrast, however, in another county, when counting and recounting came up 20 ballots short of the ballot manifest total, an election official had the audit board sign the ballot manifest and move on.

Such variation in practice indicates an absence of established procedures for utilizing the ballot manifest information and comparing the totals from the hand recount to the totals from the ballot manifest — an issue unique to this RLA. These incidents also suggest that election officials were aware of problems with emptying the scanner ballot box, i.e., that some ballots can get stuck inside. This is a design problem that should be addressed rather than relying on vigilance in emptying the ballot box.

Vote Review Panels – Vote review panels, composed of one Democratic and one Republican volunteer, handled three types of handwritten ballots that could not be sorted and counted by the audit boards: ballots with write-in candidates, duplicated ballots, and ballots where there was uncertainty about the voter’s intent.

Under Georgia law, only “qualified” write-in candidates are counted.³¹ Candidates who did not qualify or frivolous write-ins are not counted. Write-ins were sent to the vote review panels so that audit boards did not have to keep track of which candidates had qualified. Duplicated ballots were those too damaged to go through the scanner, requiring that a duplicate ballot be created by

²⁸ Counties had not been instructed to use ballot manifests in the full hand tally. Carter Center observers reported that some counties were using total ballot counts from ballot manifests (not vote counts) to check their own numbers, but they had not been directed or encouraged to do so (email communication from Monica Childers of VotingWorks, Dec. 9, 2020)

²⁹ One audit board (from the total of 509 audit board reports) was observed entering the ballot manifest total on the batch sheet rather than counting anew.

³⁰ Votes that include write-in candidates are held in a separate tray in the scanning machines.

³¹ To qualify as a write-in candidate for president in Georgia, a candidate must file a notice of intent with SOS by the first Monday in September in the year of the election. In addition, he or she must also file an affidavit affirming that the notice of intent was published in a “newspaper of general circulation in the state.”

election officials. For duplicated ballots, the review panel simply checked the accuracy of the duplication. In some cases, Vote Review Panels were tasked with matching up the damaged ballot and its duplicate. For both write-in and duplicated ballots, the vote review Panel's task was essentially clerical. In cases of disagreement about the voter's intent between the audit board members, a decision of the vote review panel was required, and when the two party vote review panel members could not agree, the county election superintendent was called in as a third panel member.

Perhaps because only some of the ballots required adjudication, and because each Panel had both a Democrat and a Republican member, there was less party monitoring of the Vote Review Panels. Out of Carter Center reports on 96 Panels, 74 (77 percent) had party monitors observing, while 14 (15 percent) did not.

Carter Center monitors reported some inconsistencies in training for vote review panels. A Republican member in one county was quoted as saying that he was not trained and did not know what he was doing. Occasionally a political monitor was asked to step into the review panel role when it was short a party member. In one county, Carter Center monitors reported that panel members taught each other between shifts.

The most striking observation about the vote review panels was the nearly complete absence of acrimony, or even much disagreement at all. For 16 counties, Carter Center monitors volunteered that working relationships between the Republican and Democratic members were largely "friendly" and "cooperative." The biggest challenge seemed to be deciphering names of write-in candidates.

It is unknown whether there was any systematic training on discerning "voter's intent." Questions of voter intent appear to have been handled on a case-by-case basis when the election superintendent was called to assist the vote review panel in reaching a decision. Agreement was most often reached by talking through the issue rather than by asking the election superintendent to break a tie. In 16 of the counties observed, the Carter Center monitor reported that vote review panel operation was cooperative, and while some superintendent participation may have been required, in only one county did a monitor specifically note that a superintendent was needed for tie breaking. The low incidence of cases of disagreement suggests that there were few cases in which the voter's intent was genuinely at issue. Out of 88 Carter Center responses on vote review panel decision-making, 56 (64%) saw no pattern favoring either candidate in the 2:1 decisions; and 32 (36%) during their period of observation had no disagreements to report on.

Variable Workflow – In practice, the flow of ballot containers in and out of check-in did not work as smoothly as envisioned. Ballot boxes often came in waves. After all audit boards received boxes early in the morning, there was little for check-in staff to do until audit boards requested pick-ups, which happened at roughly the same time. Check-in personnel might have nothing to do for several hours after boxes were signed out but become overwhelmed when many audit boards finished small batches all at once.

Carter Center monitors reported that 13 counties processed ballots by type (e.g., early, absentee), completing one before starting the next, beginning on the first audit day with absentee ballots per instructions from the Office of the Secretary of State. (Other counties may have done so as well, but it was not specifically noted.) Some audit boards might then be waiting with no work to do while another audit board finished a large batch. All audit boards would then shift to early voting ballots at the same time. Similarly, when there were only large batches to be processed, an election superintendent might not want to assign one near the end of the day. The workload of vote review panels depended on the type of ballots being processed by the audit boards; with machine-produced ballots, there was nothing to review. Processing sequentially by type and batch size variability results in inefficient utilization of available personnel.

Sometimes the audit boards placed the envelopes containing ballots to be reviewed by the vote review panel inside the ballot box rather than on top of it according to protocol. This raised chain-of-custody concerns because if the ballot box was sealed it would have to be opened to retrieve the envelopes. Sometimes completed batches with envelopes went to the vote review panel via check-in, and sometimes the envelopes were taken directly to the panel. If there was a backlog at the vote review panel, it could be a while before reviewed ballots were sent to check-in to be reunited with their ballot batch. Carter Center monitors did not observe the process of returning reviewed ballots to their batch.

Data Entry and Results – The original intent was to use two-person data entry teams, with the two checking each other's reading of the result and the entry into the computer. However, data entry procedures varied, and many counties rapidly scaled up the data entry function as they learned how much time was needed to input all the batch sheets. For example, Gwinnett County expanded from one or two laptops to 15 two-person data entry teams. Data entry did not always follow the official procedure, which required two people to look at the batch sheet and confirm that the correct entry into Arlo was made. More often, one person would read aloud and the other would make the key entry, neither looking at what the other was doing. Some counties did continuous data entry. Others did not start until late in the day or even the next day.

During the audit, the uploaded data could be viewed on Arlo by the Secretary of State's Office, which had planned to announce interim numbers processed, but only release results when an entire county was finished counting.³² Results by county were announced Nov. 19, 2020. The batch sheets — the source documents for data entry — were retained by each county. Although it is not known whether counties generated and announced their own results by adding up the batch sheets, they could do so at any point. At least one county did make a results announcement when its recount was complete, indicating that they had done the addition. As a practical matter,

³² As counties uploaded their data into Arlo, VotingWorks was continually checking for plausibility and obvious errors. According to Monica Childers of VotingWorks, they were not looking for exact numbers to match and did not intervene to notify counties about possible errors except when they appeared to be errors of human operations (missing a batch entirely, duplicating a batch). In those cases, VotingWorks was not checking individual batch totals against the original machine totals. (Email from Monica Childers, Dec. 9, 2020.)

county results could most easily be accessed through Arlo while the batch sheets remained securely under the control of county election offices.

Ballot Security – Ballot security and chain-of-custody issues are key to the conduct of any postelection audit, including RLAs. Sealed ballot boxes were not supposed to be opened until the audit board unsealed them, and then resealed after counting. In practice, however, not all counties followed this procedure. In some counties, containers were unsealed by check-in staff and the batches contained within were distributed, unsealed, among several audit boards.³³

The physical security of the ballot boxes also differed across counties, with larger ballot boxes presenting more challenges with ballot security. Carter Center monitors noted the following examples of different practices across counties. In one county, audit board members were told they could not take a break until the batch they were working on was completed and the box sealed. If they were working with very large batches, this could result in lengthy periods between breaks. In other counties, one member stayed with the ballots while the other took a break, or an election official covered for both. In yet other counties, ballots were simply left unsecured on the table. In one metro county, an open box of ballots was left under the audit board table during the lunch break. In another metro county, audit board tables were grouped by zone. For lunch breaks, police roped off a zone with tape and stood guard while the audit boards in the zone went to lunch. Late in the afternoon in one county, an audit board working on a container of 5,000 ballots was instructed to count the 2,000 ballots that they had sorted and seal the 3,000 unsorted ballots to finish them the next day. The check-in/check-out station was not always staffed. In one county, the Carter Center monitor reported that check-in staff were absent on several occasions, once for 15-20 minutes. Although the ballots were unguarded, no one approached, but audit boards had to wait for service.

While Carter Center monitors noted these variations in how counties addressed the challenges of ballot security when tallying large ballot boxes, overall, ballot security was maintained throughout the hand tally process.

COVID-19

County election officials and partisan observers varied in adherence to Centers for Disease Control and Prevention guidelines related to the COVID-19 pandemic. In DeKalb County the

³³ Monitors noted several examples of sealing problems. Often the seal was tape across a flap or zipper, sometimes with signatures on it, but this security feature did not survive reopening. As one monitor noted, some boxes had so many layers of broken and new tape that it was hard to tell what had been opened when. In another case, the box was taped, but with a hole big enough to put a hand through. In Fulton County, the check-in runners were very conscientious, making sure ballot containers were sealed. In another case, early voting ballots were unsealed in another room and then brought into the main room to be counted, clearly a break in ballot security. Only one monitor (in Gwinnett) made a reference to a numbered seal, but such seals, with numbers recorded upon receipt, do not seem to be in widespread use in Georgia.

county director of public health was present with 10-12 workers in identifiable salmon-colored vests to make sure masks were on and that each table had plenty of gloves, wipes, and hand sanitizer. Bibb County required the monitors to wear face shields and gloves. In Forsyth County, COVID protocols were reviewed with all those present at the hand recount.

In another county, Carter Center monitors overheard multiple complaints from audit board members about political party monitors failing to maintain social distancing. The following day, people in the audit area had to sign “acknowledgement of risk” forms. In one metro county, two observers in the public area got into an argument when one of them refused to wear a mask. Others attempted to shame the observer who refused to wear a mask and he eventually left. In general, Carter Center monitors identified a lack of adherence to social distancing and mask wearing as a source of stress during their observation activities.

Transparency

Transparency is key to all postelection audits. The Georgia RLA hand tally enjoyed high levels of transparency and was conducted in full view of partisan and Carter Center monitors, as well as public observers and observers from the ACLU and the NAACP. Under rules established by the secretary of state, political parties and designated organizations could have at least two monitors on the audit floor at any given time, with an additional monitor allowed for every 10 additional audit boards. In a large county, the number of monitors allowed by this formula could contribute to overcrowding, depending on the physical size of the audit location. For example, Gwinnett County, with 153 audit boards, could have 15 monitors from each party.³⁴ Rules prohibited the use of cell phones or other electronic devices on the floor, and monitors were prohibited from taking photographs or touching ballots. Public observers and the press could observe from a roped-off area, where some used binoculars for a better view. For even greater transparency, some counties showed close-ups of the operations on a video screen for monitors and observers to see, and some counties livestreamed the audit operation over the internet.

Some election superintendents were very focused on transparency. For example, in Douglas County, they took time to explain procedures to monitors. In Forsyth County, monitors were welcomed and encouraged to walk around the room and observe activity. The Paulding County election superintendent announced that monitors were present, thanked them, and invited them to raise questions or offer observations.

The two main political parties were generally present and, for the most part, their presence was in accordance with the rules established by the secretary of state. Carter Center monitors reported that 90% of the counties monitored had coverage by Republican monitors and 92% of the counties had coverage by Democratic monitors. While there were often more Republican than Democratic monitors present at the audit site, the numbers of monitors allowed on the audit floor were balanced in the counties where Carter Center monitors were present. In addition, it should

³⁴ In a letter sent Nov. 12, 2020, to the secretary of state, the Georgia Republican Party requested a ratio of one monitor for every audit board, a number that would overwhelm the audit facilities, with crowds increasing the COVID risk and making it impossible to keep ballot boxes in view.

be noted that because vote review panels were composed of Republican and Democratic members, there were always some party representatives present. In at least two counties, Carter Center monitors reported that the election superintendent was advised by the Secretary of State's Office to allow more monitors than the formula allowed in the interests of transparency and reducing partisan friction. This was interpreted to mean that additional Republican monitors could be given access to the auditing area.

Behavior of Political Party Monitors – As noted above, the rules and procedures established by the secretary of state and carried out by local election officials were designed to ensure transparency of the hand tally. While Carter Center monitors noted instances of collegiality between party monitors, they also noted instances where the presence of political party monitors proved to be a source of tension, hostility and even intimidation. The vast majority of instances of problematic behavior by party monitors reported by Carter Center monitors concerned Republican monitors. In only one county did a Carter Center monitor observe a problem with Democratic monitors: In a metro county Democratic monitors were constantly asked by election officials to refrain from talking to auditors and offering advice. One monitor complained to a Democratic vote review panel member about being insufficiently assertive in saving ballots for Joe Biden.

In nine counties, monitors noted examples of Republican interference or hostility. For example, Republican monitors were told repeatedly to observe social distancing and not lean over auditors. One Republican monitor was observed on her knees in between the Audit Board members to hear what was being said. In another county, a Republican monitor wearing camouflage and a face-covering balaclava leaned over a data entry operator. In one county, election workers complained about Republican monitors hovering and not observing social distancing. The monitors were warned, and police were notified but did not need to intervene. In another county, election officials added plexiglass barriers after monitors did not maintain social distancing on the previous day of counting. Republican monitors then complained that they could not see through the barriers. In several counties, Republican monitors used cellphones on the audit floor to make calls and for photographing audit boards and ballots. In another county, Republican monitors talked to audit board and vote review panel members, congregated in groups around tables, and wanted a closer view of the ballots. These instances and others observed added to the stress of the hand tally for all involved and likely affected the speed and accuracy of both counting and data entry.

Republican monitors also were observed criticizing and sometimes intimidating audit board members. In one county, an audit board member was reduced to tears by the Republican monitor's persistent criticism. In four counties, Carter Center monitors noted Republican monitors or observers being escorted from the counting location by law enforcement. In 14 (27%) of the 52 general observation reports that addressed the issue, security or law enforcement was called. In four cases, disruptions were sufficient to stop auditing temporarily.

Carter Center monitors reported that Republican party monitors tended to focus more on audit boards staffed by persons of color. Monitors in six counties reported that audit boards staffed by women of color were more closely watched and in some cases subject to intimidating behavior.

In one county, a Republican monitor accused two African American audit board members of fraud and threatened to video them, even though phones were prohibited in the auditing area.³⁵

Despite the instances of problematic behavior by party monitors (almost always Republicans), the accuracy of sorting and counting did not seem to be in dispute. In only one instance did a Republican monitor claim that a Trump ballot was sorted into the Biden pile. In that instance, the supervisor overseeing the process confirmed that there had been no error.

It is worth noting that a different atmosphere was observed in counties where both the vote review panels and the audit boards had representation from both parties. In three counties observed, Glynn, Hall and Muscogee, local party organizations were asked to provide volunteers to staff the audit boards. Only one incident involving an uncooperative partisan monitor was reported in these counties. The experience in these counties, as well as the general statewide experience of collegial vote review panels, suggests that interparty acrimony is reduced when both parties understand the process and are responsible for implementing it together.

[Understanding the RLA Process](#) – Party organizations at the local, state, and national level that recruited observers apparently did not explain the process to their observers or provide them with forms or checklists to document their observations systematically. One county helped to alleviate this problem by showing the Secretary of State’s training video on monitors where the public observers could view it.

Carter Center monitors frequently reported that neither Republican nor Democratic monitors seemed to fully understand the event they were witnessing or how it was supposed to work. Several Republican monitors made comments such as, “This is just a PR stunt,” “They’re just looking at marks on a paper,” and “Counting the marks on the paper looks fine, but that doesn’t tell us whether those are legitimate votes.” One Republican monitor asked the audit board whether they were checking signatures on the ballots and complained that they were “just looking for Trump or Biden and not checking anything else.” Such comments suggest a general unfamiliarity with the purpose of audits and the RLA hand tally.

More broadly, the hostility of some Republican monitors seemed to reflect their unhappiness with the election outcome and the lack of signature checking as part of the RLA process. Some of the remarks by Republican monitors suggest that their main interest was to challenge the legitimacy of the ballots rather than to question the hand tally process itself.

[Discovery of Lost Ballots](#) – Late in the audit process, four counties discovered previously uncounted ballots. In Fayette, Walton, Floyd, and Douglas counties, county officials found that information on memory cards from scanners for about 3,000 votes had not been properly uploaded and thus not included in the initial reported election results. As part of the RLA hand recount, paper ballots for these votes were found and counted. All three counties recounted the

³⁵ The racial disparities between monitors and election workers should be noted. In counties where we observed conflict between party monitors and audit board members, most party monitors observed were white while audit boards members were more often people of color.

ballots, reconciled their counts against the number of voters who voted, and certified their county-level election results in advance of the state certification of results on Nov. 20. In Floyd County, a scanner used in one early-voting location jammed, and the memory card in the scanner was corrupted, with the results not scanned nor included in the initial reported results. When these 2,600 uncounted ballots were discovered during the hand tally, the Secretary of State's Office and Floyd County election officials decided to rescan all votes cast at that location, including the 2,600 ballots in question.

Conclusions and Recommendations

As described above, there was some variation in practices and improvisation, particularly regarding how to handle large containers, the documentation of the chain of custody, the batching of envelopes for vote review panels' attention, and how data entry work was divided up. The process did not unfold exactly as it was envisioned at the outset. However, given the reconciliation processes and the substantial number of monitors and observers present, the reports from Carter Center monitors indicated that ballot integrity was maintained.

Should Georgia need to conduct a full hand recount in the future, or even to recount some large number of ballots, it will be important to implement more consistent procedures for handling ballots. This will be particularly important for the next RLA, scheduled for the general election in November 2022. Since RLAs require that ballots be selected based on a randomly generated sample, more meticulous attention is required than when recounting an entire box. The 2020 RLA has served an especially useful function in providing information about the speed of counting, the workload of vote review panels, the challenges of maintaining chain of custody and logging ballot box distribution, bottlenecks at the check-in table, and the speed of data entry.

Overall, the Office of the Secretary of State effectively developed and communicated procedures for the hand tally, and counties did an admirable job of conducting the audit, preparing on a very short timeline, and creatively adapting as the process and its demands unfolded. Georgia appears to be well positioned for its next RLA.

Recommendations

The conclusions and recommendations that follow are based on the observations of Center monitors during the RLA conducted in Georgia Nov. 13-18, 2020. Overall, the Center's monitoring team found that the Office of the Secretary of State, the State Election Board and county election officials conducted a successful RLA under tremendous time pressure and in a challenging political environment. The Office of the Secretary of State is to be commended for seeking transparency by having monitors, including Carter Center monitors, observe the process.

Georgia's statutory requirement to conduct biennial RLAs provides an important, transparent mechanism that can improve public confidence in the electoral system.

The Center respectfully offers the following recommendations to the Office of the Secretary of State in the hope that they might improve future postelection audits.

Develop a systematic, statewide strategy for ballot storage, including the creation of ballot manifests and more manageable batch sizes. Observing the hand tally procedures in 25 counties made it clear to Carter Center monitors that there is a relationship between ballot storage decisions and the ease of accessing ballots for a postelection audit. Audit boards struggled with both the proliferation of batches of 100 ballots and with very large batches of ballots taken from scanner/tabulators. In cases of the former, the large volume of batch control sheets slowed data entry. In cases of the latter, election workers became exhausted and lost count, or batches were counted over two days or split among several audit boards, creating chain of custody concerns. More uniformity in batch size would help to even out the workload. Creating more systematic and uniform procedures for ballot storage will also support the process of creating ballot manifests and retrieving ballots in future RLAs. Creating ballot manifests is good practice, even in the absence of a required RLA. Manifests clarify storage and reconciliation and allow county and state election officials to be prepared for a range of postelection audits and recounts.

Develop more consistent workflow and be more consistent with sign-ins to establish accountability for ballots at every stage. Carter Center monitors noted variations in counting procedures that created both bottlenecks and periods of inactivity for election workers during the hand tally. Monitors also mentioned concerns about sign-ins and ballot security, particularly in cases where the counting of large ballot batches was not completed in one day.

Develop reconciliation procedures specifically designed to handle the increased numbers of early and absentee votes. The missing ballot problems in Fayette, Douglas, Walton, and Floyd counties appear to be cases of reconciliation procedures' being inadequate to track the range of voter options for submitting ballots. In this election, early voting took place over a period of more than three weeks, Oct. 4-30, at a variety of locations, and 2,694,763 voters, or 67% of total voters, chose this option.³⁶ Established reconciliation procedures did not account for this temporal and geographic dispersion, and it is not surprising that some misplaced ballots were not immediately caught by existing procedures.

Improve layout and readability of both the hand-completed and the scanner-printed ballots and consider a state-level review of the use of QR codes on the printed ballots. Observers noted audit board complaints about difficulties reading the printed ballots produced by the BMDs. This issue may also have affected voters, who were directed to review the printed ballot to confirm their choices prior to inserting it into the scanner/tabulator. If the printed ballot is difficult to read, voters may fail to detect a mistake or skip reviewing it altogether. User testing of ballot layouts, in addition to improved print legibility, would ensure that voters could accurately confirm their preferences. In addition, confidence in Georgia's elections could be strengthened by a state-level review of the use of QR codes on the printed ballots, and by further efforts to ensure that voters check their ballots before they are scanned.

³⁶ <https://elections.sos.ga.gov/Elections/voterabsenteefile.do>

Strengthen public outreach and education about the RLA well in advance of its next implementation in 2022. One purpose of the RLA is to increase public confidence about electoral processes, but that cannot happen if the public does not understand a few main points regarding RLAs' statistical basis, how they are conducted, and what an RLA can and cannot do. Before the next RLA, scheduled for the general election in November of 2022, the SOS and SEB, in collaboration with county election officials, should carry out a public education campaign focused on the RLA and increasing public confidence in Georgia's electoral system. Such a campaign could utilize print media, public advertising, social media, and television to educate the public about RLAs and election integrity.

Consider increasing use of party volunteers to staff audit boards and vote review panels. The absence of interparty acrimony on the vote review panels in all counties, and in the three counties where party volunteers staffed the audit boards, suggests that when parties understand the process and have a stake in its implementation, the level of hostility, and the resulting stress on election workers, can be reduced.

Provide training for monitors. The Secretary of State's Office is to be commended for providing credentials for official monitors. Official monitors would benefit from a better understanding of the process they are recruited to observe. Carter Center monitors received five hours of training from VotingWorks, Carter Center staff and the Office of the Secretary of State focused on what an RLA was, how it is conducted, and the appropriate conduct of monitors. Feedback from Center monitors suggested that political party monitors did not receive much, if any, training. In fact, it was noted that many party monitors did not seem to understand the process they were observing. The Secretary of State's Office, or its partners, should provide training for all official monitors to increase the transparency of and understanding about the audit process. In some other states that have conducted RLAs, election officials offer a walk-through for monitors. Something like that could be usefully implemented in Georgia as well.

Reexamine the design of scanner/tabulator ballot boxes. In three of the 25 counties where Carter Center monitors were present, supervisors went back to the scanner boxes to look for (and retrieve) missing ballots. They apparently knew there was a problem with ballots getting stuck. This should be addressed with the manufacturer. The boxes are also too large for easy handling, and a modified Election Day system may be needed for securely packaging all the in-person ballots into smaller boxes.

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VotingWorks, who generously provided training to Carter Center observers and answered many questions about the theory and practice of RLAs.

Sincere thanks also go to the observers who diligently gathered data for this report, as well as to those who were willing to observe but whose service was ultimately not required due to the speed and efficiency of the process. Their willingness to undertake this important task during a pandemic, and their flexibility during rapidly changing circumstances, are deeply appreciated. The dedication and effort put forth by the observers and by the mission support team — Avery Davis-Roberts, Sita Ranchod-Nilsson, Inge Fryklund, Sandra Urquiza, Rana Shabb, Lisa Wiley, Tynesha Green, Molly Ison, Brandy Blue, Dan Grober, Amber Shupe, Barb Abrams, Ben Mair, Story Evans, Madeleine Evans, Lauren Griffin and Kenya Casey — were crucial to the mission's success.

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Appendices

Appendix A – MOU between the Office of the Secretary of State and The Carter Center



The Office of Secretary of State

Brad Raffensperger SECRETARY
OF STATE

MEMORANDUM OF UNDERSTANDING BETWEEN OFFICE OF THE SECRETARY OF STATE AND THE CARTER CENTER

The Georgia Sec. of State (SoS) and The Carter Center (TCC) agree that SoS intends to invite and accredit TCC to serve as an independent observer of the Risk-Limiting Audits (RLAs) to be conducted following the Nov. 3 elections in Georgia. (This effort would be separate from TCC's nonpartisan role in the Bipartisan Task Force for Safe, Secure, and Accessible Elections, but could go forward in a manner that could inform discussions in the Task Force).

TCC will submit any information requested by SoS necessary for accreditation, and will follow all guidelines and respect any restrictions, as determined by the SoS, as appropriate for an accredited independent observation effort. TCC will also follow instructions given by county election officials while observing the auditing process to ensure the observation does not interference in the process.

As an accredited observer, TCC will be provided with complete and meaningful access to all stages of the work and implementation of the RLA, so that TCC's observers can credibly report on the process, including o Access to relevant training materials and documentation about the RLA process that will allow a thorough evaluation of the process;

- Access to observe processes regarding the design and selection of the audit samples;
 - Access to speak with and interview state and county election officials and audit boards about the audit process;
 - As part of the observation work, ability to observe and accompany county election officials and audit boards through the entire RLA process from start to finish;
- TCC reserves the right to select locations of audits that they decide to observe. They will share the criteria used for making this selection with the Office of the SOS.

- TCC can make public statements about the process. TCC will provide advance copies of any public facing documents with the Office of the Secretary of State 24 hours in advance of release.
- TCC will release a preliminary statement shortly after completion of the RLA process, and a more detailed final report some time thereafter which will include key findings and recommendations for future audit efforts.
- TCC might also release statements in advance of the RLA observation to announce our efforts, and educate the public on the purpose of the RLA.

TCC will not:

- o Divulge any information protected from disclosure by state law

- o Interfere in the auditing process
- o Handle ballots or other sensitive materials as designated by SoS or county election officials
- o Use photographic or other electronic monitoring or recording devices while observing the audit
- o Use cellular telephones while observing the audit
- o Divulge any documents or confidential information shared with them about the audit process without approval from SoS
- o Divulge any documents or confidential information to any person regarding the audit process or observation if that person is adverse in litigation to the State of Georgia or any county elections office

Appendix B – List of Acronyms

ACLU American Civil Liberties Union

BMD Ballot Marking Device

DRE Direct Recording Electronic voting system

MOU Memorandum of Understanding

NAACP National Association for the Advancement of Colored People

OCGA Official Code of Georgia Annotated

PAC Political Action Committees

QR Quick Read code

RLA Risk-limiting Audit

SEB State Election Board

SOS Secretary of State

Appendix C – Observation Forms

Observation Forms

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HAND RECOUNT of Presidential Race: Audit Board (AB) Monitoring:

County: _____ Monitor: _____

Date:	Audit Board # _____	Audit Board # _____	Audit Board # _____
Time AB monitoring began			
Did AB have all supplies? Resupplied when needed? (Red pens desirable but not required)	Y N	Y N	Y N
Was the AB table kept neat so there was clear view of all ballots, and no food or beverage on table?	Y N	Y N	Y N
Did Check In respond promptly when AB requested delivery/pick up of Container?	Y N	Y N	Y N
Containers always sealed when received from Check In (cut open at AB table)?	Y N	Y N	Y N
All ballots sorted and counted by candidate? Should be labels: Trump, Biden, Jorgenson, blank.	Y N	Y N	Y N
Did both AB members view every ballot and call out their reading?	Y N	Y N	Y N
Were there disputes about Voter Intent? How many ballots were in dispute while you monitored? How many were resolved by AB?	Y N	Y N	Y N
How many unresolved ballots were sent to the Vote Review Panel while you monitored??			
Did AB use envelopes for Write-in, Overvote and Unresolved?	Y N	Y N	Y N
When picked up by Check-In, were ballots back in sealed container, with envelope and signed Batch Sheet on top?	Y N	Y N	Y N
How many total containers and ballots were processed while you monitored??			

Time monitoring ended & duration of Audit Board's shift			
Any disruptions? Describe.	Y N	Y N	Y N
Other observations/comments			

Please use space in cells or back of page for comments, and additional pages for additional ABs

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HAND RECOUNT of Presidential Race:
Monitoring of Check In/Check Out Station and General Observations

County _____

Monitor(s) _____

Date _____ (one form/day, please)

Purpose: to get an overview of how the county is handling its RECOUNT. An observer near the Check In/Check Out Station can complete this form, or there may be input from several monitoring team members. Please add comments if applicable as well as the Y/N responses.

Party Monitors present? R D Public Observers (non-credentialed) present?

Describe: _____

_____ General
atmosphere at county recount space: (circle as many as applicable and

describe); Calm Hectic Professional Confused Cheerful Other _____

Arrangement of work space at County Elections:

- How many Audit Boards? _____
- How many Vote Review Panels? _____
- Was there adequate table space for Audit Boards and Review Panel(s)? Y N
- Could Monitors get a good view of the AB tables? Y N

“Check In/Check Out” Station

- Were sealed ballot boxes stored behind barrier/table that blocked general access to ballot storage? Y N
- Were staff always present at Station to check containers in and out and prevent entry to ballot container storage? Y N
- Did Check In/Out Station staff respond promptly to Audit Boards’ raised “check signs”?
- Did Station record Name of Batch, AB assigned, Time of assignment in Inventory form? Y N
- Was container sealed when Station took it to Audit Board? Y N
- When container was picked up from AB, did Station staff sign it back in on Inventory? Y N
- Was sealed container returned to storage after it was checked in? Y N
- Did the Check-In/Out process appear well organized? Y N
- Did someone do data entry of Batch Sheets and Vote Review Tally Sheets? Y N • Were envelopes returned from Audit Review Panel (Disputed, Write-In) placed with the container box, and were ballots later re-sealed inside? Y N

Was the audit process well-managed, with workloads for Audit Boards, Review Panels, Check-In

Station balanced to prevent bottlenecks and smooth workflow? Y N

Did Superintendent conduct troubleshooting? Y N

Security (Sheriff) required? Y N. _____

Were there any disruptions that stopped auditing? Y N _____

Comments: _____

Other observations (use back of form if necessary)

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HAND RECOUNT of Presidential Race: Interviews/Observations re RLA Preparation

County: _____

Date of interview _____ Observer/Monitor/Interviewer _____

Purpose: to obtain information about how the County prepared for the RLA. These activities should have been completed before the SOS announced that a FULL HAND RECOUNT would be held instead. This provides information on the County's success at preparing for the RLA. Information could be obtained from conversations with Election staff and/or observing how ballots were batched and stored

Describe counting and batching process for Absentee and Provisional ballots (handwritten)

Were all Absentee and Provisional batches <100 paper ballots? Y N Other explanation?

How were Early votes (Oct 4-30) counted and batched?

How were these Absentee, Provisional and Early vote batches grouped into Containers?

Does a precinct constitute one Batch and one Container? Y N Largest size batch size. _____

What is the County's naming convention for Containers (e.g., number, polling location, etc.)

Describe how County created the County Ballot Manifest—2-column spreadsheet listing Containers, Batches within Container, and number of ballots in a Batch. Were there problems? Who helped? Was the total number of ballots listed on the Manifest reconciled against the number of voters?

Were there problems uploading the Ballot Manifest to Arlo: Did it take more than one try? Did the County ask SOS or Voting Works for help?

Are County Elections staff comfortable with the process of batching ballots and preparing the Ballot Manifest? Awkward? Straightforward? Do they have suggestions for improvement?

Please use back of form for any additional comments

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HAND RECOUNT of Presidential Race: Vote Review Panel Monitoring:

County: _____ Monitor: _____

Date:	Vote Review Panel # _____	Vote Review Panel # _____	Vote Review Panel # _____
Time Review Panel began work			
Did Check In/Out Runner deliver envelopes of unresolved ballots?	Y N	Y N	Y N
Was there any sign in/out process for the delivery? If so, describe:	Y N	Y N	Y N
Did a backlog of envelopes accumulate?	Y N	Y N	Y N
How many envelopes (= Audit Boards) did Panel handle while you monitored?			
How many total ballots did Panel resolve while you Monitored (best estimate)?			
Describe working relationship within Panel (e.g., contentious, cooperative)			
Same panel members all day? Any significant changes?	Y N	Y N	Y N
For how many (or proportion) ballots were two Panel members in agreement?			
Describe how Panel handled disputed ballots. Quickly resolved? Hotly disputed?			
For how many ballots did Election Superintendent have to break tie? (i.e., 2-1 decision)			
Was there a clear any pattern to the 2-1 decisions—e.g., consistently ultimately deciding for Trump/Biden?			
Were party monitors watching the Panel's process? Any interference?	Y N	Y N	Y N

Were envelopes promptly picked up by Runner when Panel finished	Y N	Y N	Y N
Time Panel completed its work			

Please use space in cells or back of page for comments, and additional pages for additional Panels